

Barriers to training access

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Many researchers contend that a well-trained labour force is a way to achieve and maintain a competitive advantage in today's global business market (Aragon-Sanchez et al. 2003, Industry Canada 2002, and Turcotte and Rennison 2004). Thus, providing training has been advocated as sound social policy for competitiveness (Conference Board of Canada 2008 and OECD 2006). Recently, the Conference Board of Canada (2008) reported that Canada does not have a focused strategy to ensure that work-based skills training and lifelong education are prioritized. Furthermore, Canadian employers are low investors in workplace training programs on an absolute basis (Betcherman et al. 1998) and relative to their European counterparts (Goldenberg 2006).

Others argue that working conditions in Canada are polarized (Betcherman and Lowe 1997). Simply put, a substantial number of individuals are in jobs featuring relatively poor pay, benefits, security and stability (Chaykowski 2005, and Morissette and Zhang 2005). Moreover, this dichotomy seemingly extends to the receipt of employer-supported training opportunities, with some receiving much more training than others (Peters 2004, Saunders 2003 and Sussman 2002).

An abundance of Canadian and international studies indicate that less-educated workers are much more likely than others to have low-paid jobs (e.g. Cooke 2007, and OECD 2005 and 2006). Not surprisingly, these workers are among those with relatively poor access to training (Zeytinoglu et al. 2008). Historically,

unionization has led to improved conditions of work, and recent studies suggest that unionization continues to be associated with higher wages (Fang and Verma 2002). While the benefits of unionization are potentially shrinking in today's era of open and global markets, recent evidence suggests that unionized workers continue to have better access to training than non-union workers (Boheim and Booth 2004, Cooke 2007, and Turcotte et al. 2003), although the effects are potentially different for men and women (Hurst 2008).

Women are over-represented among those in lower-quality jobs (Cranford et al. 2003 and McGovern et al. 2004). These authors also indicate that women continue to be disadvantaged even among those with poor employment. This is consistent with the historical notion that women have faced additional barriers in the labour market, intentional or otherwise (e.g. Padavic and Reskin 2002). In terms of training in particular, previous research on women's receipt of employer-supported training is inconclusive.

Some studies show that, relative to their male counterparts, women are less likely to receive employer-supported training (e.g. Frazis et al. 2000, Knoke and Ishio 1998, OECD 2006 and Sussman 2002), while others report either unsubstantial differences, or slightly better access for women (e.g. Peters 2004, Turcotte et al. 2003, Underhill 2006, and Simpson and Stroh 2002). Moreover, differences in the receipt of employer-supported training, when comparing men and women, are not always apparent unless the effects of other related factors in the workplace are

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controlled for (Knoke and Ishio 1998). Consequently, it can be argued that among the key characteristics associated with a poor-quality job, all else being equal, are earning low wages, having a lower education, not having the protection of a trade union, and, in particular, being a woman. To be consistent with existing research (e.g. Saunders 2003, Chaykowski 2005 and Vallée 2005), individuals with these characteristics are referred to as 'vulnerable' workers in this article. While workers with vulnerable characteristics are clearly not a homogeneous group, the literature suggests that workers with these characteristics are, on average, relatively vulnerable compared with other workers.

Using the 2005 and 2003 Workplace and Employee Survey (WES), this article explores the receipt of employer-supported training among these potentially vulnerable workers (see *Data source and definitions*). Training increases earning potential and access to higher-quality employment opportunities (OECD 2005 and 2006, Morissette and Zhang 2005, and Vallée 2005). Having a highly trained workforce also benefits employers in terms of productivity and adaptability, particularly given the emerging shortage of skilled workers in Canada (e.g. Aragon-Sanchez et al. 2003 and Goldenberg 2006). It is therefore important to ascertain whether certain identifiable subgroups of workers receive tangibly different levels of training from their employers. Secondly, the proportion of these workers declining employer-supported training is also considered. Although reasons for declining training are undoubtedly numerous, they can provide general insight into the importance of training to the various workers.¹

In terms of the theoretical foundation for employer-supported training, Becker's labour economics theory (1964) suggests that workers should pay for any general training that leads to the acquisition of new skills and earning higher wages, and employers should pay only for firm-specific training. Empirical evidence, however, suggests that Becker's theory is more a way of understanding the investment in human capital in its pure form than a description of what can be observed in practice (Acemoglu and Pischke 1998 and 1999, and Ahlstrand et al. 2003). In practice, employers train for three purposes: to increase the productivity or performance of workers; to achieve organizational goals; and to invest in workers to succeed in the unpredictable and turbulent business environment (Belcourt et al. 2000). The potential result is that employers might

direct their training resources towards their most valued workers for strategic business reasons and away from less privileged workers (Rainbird 2000).

This study examines five overlapping groups of workers: all workers; low-wage workers; less-educated workers; non-union workers; and low-wage, less-educated, non-union workers. All five were also split by sex. In the multivariate analysis, employer-supported training was the dependent variable and sex, wage level, attained education, and unionization were examined as independent variables, along with interaction variables where appropriate. Several other individual, work, workplace and industry factors can, independently and collectively, influence an employer's tendency to provide training. Many of these are included as control variables: employment status, occupation, marital status, presence of dependent children, workplace tenure, worker age, workplace size, industry, and workplace profitability.²

Receipt of employer-supported training among all workers

About 60% of all workers receive employer-supported training, while about 12% decline it (Table 1). This figure is similar to other estimates when considering that the broad definition of access includes three types of employer-supported training received as well as those offered but declining this training. A previous study found that about one-half of Canadian workers receive employer-supported training in a given year (Turcotte et al. 2003). According to the current study, 33% of workers received on-the-job training, 37% received classroom training, and a small number received 'outside' training supported by their employer. And about one in eight declined training in the past year.

Slightly more than one-half of the respondents were women, while one-quarter were categorized as low-wage. In terms of education, 1 in 10 had not completed high school, while 1 in 6 had high school but no postsecondary education. About 1 in 5 workers had a university degree, while slightly more than one-half had some postsecondary education but no degree. For some analyses, the 27% of workers with at most a high school education were also grouped as being less educated, while the other 73% had at least some postsecondary education. Finally, almost three-quarters of workers were non-union (i.e. not covered by a collective agreement).

Table 1 Characteristics of all workers

	%
Dependent variables	
Received employer-supported training	60.1
On-the-job	32.9
Classroom	36.5
Outside	4.4
Declined training	12.2
Independent variables	
Women	52.2
Low-wage	25.6
Education	
Less than high school	10.0
Completed high school	16.6
Postsecondary, non-university	52.3
University degree	21.1
Non-union	73.1
Low-wage, less-educated, non-union	8.7
Control variables: Worker	
Non-permanent	9.1
Part-time	15.7
Occupation	
Manager	12.6
Professional	17.2
White collar	22.8
Blue collar	47.4
Marital status	
Married/common-law	68.4
Other	31.6
Dependent children	43.5
Workplace tenure ¹	8.7
Workplace tenure squared ¹	152.9
Worker age ¹	40.9
Worker age squared ¹	1,814.7
Control variables: Workplace	
Workplace size (employees) ¹	482.7
Workplace size (log form) ¹	1.8
Industry	
Primary	1.7
Manufacturing and related	31.8
Retail trade	24.3
Finance and insurance	4.7
Education and health	21.8
Other services	15.6
Profitable workplace	66.5

1. Indicates the mean among all workers. All other figures indicate the proportion of workers having a particular characteristic.

Source: Statistics Canada, Workplace and Employee Survey, 2005.

Uncovering the gender barrier in training

Among all workers, women were insignificantly less likely than men (60% vs. 61%) to receive employer-supported training (Chart A). However, that difference became significant when considering only

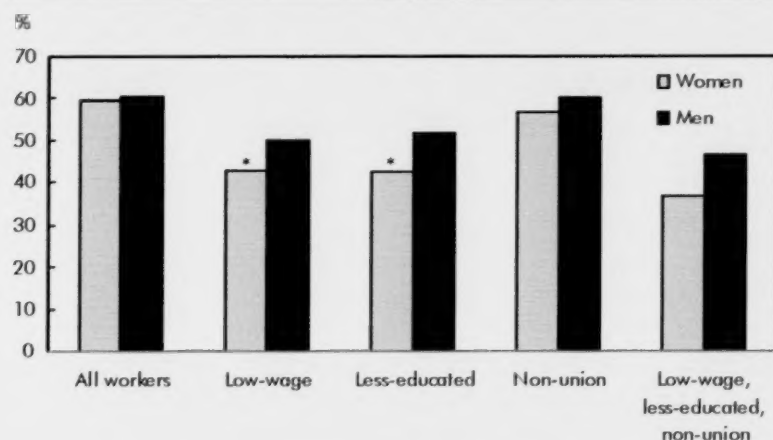
Limitations

While the Workplace and Employee Survey covers much of the Canadian labour market, it somewhat under-represents non-permanent workers because only employees receiving T4 slips from their employer are included. Thus, agency temporary workers are included only if the agency itself is included as an employer. Moreover, casual and on-call workers could identify themselves as being 'regular' employees, even though they are more accurately categorized as non-permanent.

Second, it is reasonable to presume that omitted-variable bias exists in the models. Simply put, many workplace and worker factors likely affect the receipt of training. While several of these factors were included and controlled for, all of the influential ones may not have been taken into account. For instance, an employer's perception of the 'talent' of a worker could affect the likelihood of training. A related issue is the hierarchical or clustered nature of WES data—respondents were randomly chosen from within selected organizations. Nonetheless, an assumption underlying the regression models was that all observations (i.e. individuals) were independent. This would not be the case if workplace variables (e.g. employer strategies) affected the receipt of training. Finally, it was not possible to separate workers according to province of employment.³ This would have been helpful since small but noticeable (and apparently shrinking) differences in the receipt of training have been noted by province (Peters 2004).

Although these limitations are important, the results should still hold. If anything, the regression results would likely have been stronger with controls for geography and other omitted variables. The most potentially problematic issue is the hierarchical nature of the WES data, since it could result in an over-estimation of the relationship between workplace variables and the receipt of training. Overall, the model choice, while common in the literature and able to provide insight into training issues, is a significant simplification of the full set of factors affecting training.

low-wage workers (43% vs. 50%) or only less-educated workers (42% vs. 52%). The difference was insignificant but nonetheless present among non-union workers (57% vs. 60%) and low-wage, less-educated, non-union workers (37% vs. 47%). Two main observations can be made. First, low-wage, less-educated, or non-union workers received less employer-supported training relative to all workers, although only slightly so in the third case. Moreover, this disparity was particularly substantive when comparing low-wage, less-educated, and non-union workers to all workers. The second observation is that although women and men received essentially equivalent shares of employer-supported training overall, women were less likely to receive training than their male counterparts in the four smaller subsamples.

Chart A Women in some groups less likely to receive employer-supported training

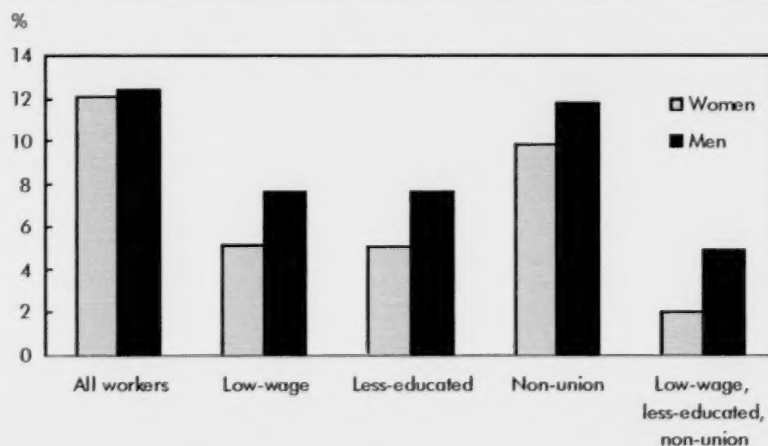
* statistically significant difference at the 0.10 level or better
Source: Statistics Canada, Workplace and Employee Survey, 2005.

Although not shown, similar differences also existed in 2003. These persistent differences between women and men for multiple subsamples and multiple years could be an indication of a 'gender training barrier.' (For more details on the substantive or statistical significance of these differences, see *Data source and definitions*).

By way of corroboration of the existence of the training barrier, the proportions of workers who declined employer-supported training in the past year were calculated. If women, on average, are disadvantaged by relatively low access to employer-supported training, one would expect them to be less likely to decline it (Chart B). Among all workers, women were only marginally less likely than men to decline employer-supported training (12.0% vs. 12.4%), but among low-wage workers, the difference increased (5.2% vs. 7.7%). A similar difference existed among less-educated workers (5.1% vs. 7.6%). The difference shrank but

remained apparent among non-union workers (9.9% vs. 11.8%). Finally, among the low-wage, less-educated, non-union workers, the difference was small in absolute size, but very substantive on a relative basis (at 2.0% vs. 4.9%). Overall, workers in the four subsamples received less employer-supported training and were less likely to decline that training. Also, within each subsample, women were less likely than men to receive training, and were also less likely to decline it, particularly among low-wage, less-educated and non-union workers.

Although the pattern among those declining training was distinct, one possible explanation is that these workers were less likely to decline training because they were less likely to receive it. A training 'vulnerability proxy' (the ratio of the proportion receiving employer-supported training to the proportion declining training) was created to test this

Chart B Women less likely to decline employer-supported training

Source: Statistics Canada, Workplace and Employee Survey, 2005.

Data source and definitions

The Workplace and Employee Survey (WES) 2005 sample comprised 24,197 employees from 6,693 workplaces with response rates of 81.2% and 77.7% respectively. Weighted, this represented 12.2 million workers. The WES covers all business locations in Canada except employers in Yukon, Nunavut and the Northwest Territories, and employers in crop production, animal production, fishing, hunting and trapping, private households, religious organizations and public administration. (For more on sampling and sample design, see Statistics Canada 2008). Although all presented results are from the 2005 WES dataset, 2003 was also used.

Employer-supported training is classroom, on-the-job or 'outside' training supported or provided by an employer in the last 12 months. Although not shown, the receipt of each of these three types is positively correlated to the others.

Although no standard definition of vulnerability has emerged, the one used here is consistent with several recent Canadian studies (e.g. Saunders 2003, Chaykowski 2005 and Vallée 2005)—workers with some or all of the following characteristics: female, low wages, less education, not unionized. These vulnerability characteristics constitute the set of independent variables. For wages, a boundary of \$13.00 per hour was established. This emerged from an analysis of the distribution of wages in this dataset. Since a standard definition of a low-wage worker does not exist, the cut-off point was set to permit identification of the lowest-paid quartile of workers. These workers should or could face different working conditions than their better-paid counterparts. Large-enough cell counts were also provided when concurrently sorting workers by education and union status. Workers were sorted into four categories according to attained education. The first two were those with less than high school and those completing only high school. To avoid small cell counts in some cases (e.g. wage level), these two were combined. The other two categories were those with at least some postsecondary education (but no degree), and those with at least a bachelor's degree. Again, in some analyses it was necessary to combine these two.

In all regression analyses, in addition to vulnerability proxy variables, controls for the possible effects of a number of other factors were also used: employment status, occupation, marital status, presence of dependent children, workplace tenure, worker age, workplace size, industry, and workplace profitability. Employment status distinguished between permanent and non-permanent jobs, and those with a full-time or part-time schedule (using 30 hours per week as the boundary). Four occupational categories were defined:

managerial, professional, lower white collar (i.e. marketing, sales, clerical or administrative), and blue collar (i.e. technical, trades, production workers, operations and maintenance). Marital status was married (including common-law) or other (i.e. separated, divorced, widowed or single). Presence of dependent children indicated an individual responsible for at least one child. Workplace tenure indicated the number of years since employees started working for their current employer. Workplace tenure squared was also included in case the relationship between workplace tenure and training was non-linear. Worker age and worker age squared were measured in years using birthdates. Workplace size was the number of employees at the employer's location. The logarithmic form of this variable was utilized to normalize its distribution. Six industry categories were defined: primary (forestry, mining, and oil and gas extraction), manufacturing and related (construction, transportation, warehousing, communication and other utilities), retail trade, finance and insurance, education and health, and other. The final control variable, workplace profitability, identified employers whose gross revenue exceeded gross expenditures for that location.

An odds ratio can be interpreted as how many times higher (or lower, if less than 1) the examined group's odds of access to employer-supported training are. Goodness of fit was measured with the pseudo R^2 and Wald chi-square. The analysis used weighted micro data accessed via the Statistics Canada Research Data Centres. Regression results were bootstrapped using Statistics Canada's recommended set of weights via the Stata function (Chowhan and Buckley 2005).

Statistical significance refers to the situation where the arithmetic likelihood indicates that a given result would be very likely to occur by random chance. On the other hand, substantive significance refers to the magnitude or importance of a given result. Researchers have high confidence if a given result, like the detected gender training barrier, is consistently shown to be both statistically and substantively significant. If, on the other hand, a result is statistically significant but not substantive, then the importance of the finding is low, and a result that is substantively significant but not statistically significant could be considered to be merely an interesting anomaly. In this paper, the male-female differences are tangible and repeatable over multiple years. However, the statistical significance in the bar charts (and via t-tests) and the odds ratios in the multiple regressions are somewhat lower in 2005 than in 2003, but nonetheless exist in multiple instances in both years, essentially indicating more variation in these key variables in 2005.

hypothesis. About five workers received employer-supported training for each one that declined it among all men and all women (Chart C). However, among low-wage, less-educated, non-union men, about nine accessed employer-supported training for every one that declined it. This suggests that these men were more

reluctant, on average, than those not sharing these attributes to decline employer-supported training. However, among similar women, 18 accessed training for every 1 declining. Thus, if the presumption is correct regarding those most likely to accept employer-supported training, then low-wage, less-educated,

Chart C Ratio of accessing versus declining employer-supported training higher among women



Source: Statistics Canada, Workplace and Employee Survey, 2005.

non-union women are the most vulnerable. This is also consistent with themes in recent academic literature exploring the plight of so-called 'vulnerable' workers (e.g. Saunders 2003, Chaykowski 2005 and Vallée 2005).

Multivariate regressions were used to see whether the descriptive patterns were replicated while controlling for other possibly influential worker and workplace variables (Table 2). Model 1 showed the relative effect of each vulnerability characteristic. Model 2 added variables to isolate the interaction of sex with each of the low-wage, less-education, and non-union variables. Model 3 was the same as Model 1 except that a single interaction variable was added to understand the combined effect of the low-wage, less-education and non-union characteristics. To recap, previous research on women's receipt of training seemed inconclusive. While

some studies showed women to be less likely than men to receive employer-supported training, others reported either unsubstantial differences or slightly better access to training among women. In this study, women were less likely to receive employer-supported training (about 93% as likely as men), although the effect was not statistically significant. In Model 2, low-wage, less-educated or non-union women were all less likely to receive training, as shown by the odds ratios for the interaction variables. In particular, less-educated women were significantly less likely to receive employer-supported training than those without these characteristics. On the other hand, women who were not low-wage, less-educated or non-union were 22% more likely than men to receive training (although this difference was not statistically significant).

Low-wage workers were only about two-thirds as likely as higher-wage workers to receive employer-supported training, with this gap statistically significant for all three models. In addition, less-educated workers were three-quarters as likely as better-educated workers to receive employer-supported training, with this gap statistically significant for two of the three models. In Model 2, less-educated women were significantly less likely than those without these characteristics to receive employer-supported training, while less-educated men did not face a similar circumstance. All three models showed non-union workers to be significantly more likely than unionized workers to receive employer-supported training, and by a factor of 16% or more after controlling for other factors. Finally, Model 3 showed that low-wage, less-educated, non-union workers did not receive significantly less employer-supported training than other workers. Nonetheless, each of those traits was individually related to the receipt of employer-supported training, with low wages and less education negatively related, and non-union status positively related.

Given the large number of control variables included in the regression results, only general observations are possible. The control variables statistically related to employer-supported training in this study were: employment status, occupation, marital status, workplace tenure, worker age, workplace size, and industry. Non-permanent workers were less likely to receive employer-supporting training relative to permanent workers, while lower-level white-collar and blue-collar workers were less likely than professionals to receive this

Table 2 Odds ratios associated with employer-supported training among all workers

	Model 1	Model 2	Model 3
	Odds ratio		
Independent variables			
Women (ref. men)	0.93	1.22	0.94
Low-wage (ref. higher-wage)	0.61*	0.68*	0.62*
Less-educated (ref. better-educated)	0.74*	0.85	0.74*
Non-union (ref. unionized)	1.16*	1.26*	1.17*
Women and low-wage	...	0.84	...
Women and less-educated	...	0.73*	...
Women and non-union	...	0.84	...
Low-wage, less-educated, non-union	0.94
Control variables			
Non-permanent (ref. permanent)	0.66*	0.65*	0.66*
Part-time	0.89	0.90	0.89
Occupation (ref. professional)			
Manager	0.94	0.95	0.94
White collar	0.53*	0.54*	0.53*
Blue collar	0.74*	0.74*	0.74*
Other marital status (ref. married)	0.82*	0.82*	0.82*
Dependent children	0.99	1.00	0.99
Workplace tenure	0.97*	0.97*	0.97*
Workplace tenure squared	1.00	1.00	1.00
Worker age	0.94*	0.94*	0.94*
Worker age squared	1.00*	1.00*	1.00*
Workplace size	1.52*	1.52*	1.52*
Industry (ref. manufacturing and related)			
Primary	1.43*	1.42*	1.43*
Retail trade	1.01	1.01	1.01
Finance and insurance	3.23*	3.18*	3.22*
Education and health	1.65*	1.59*	1.65*
Other services	1.16	1.16	1.16
Profitable workplace	0.87*	0.87	0.87*

* statistically significant for the reference group (ref.) at the 0.10 level or better

Source: Statistics Canada, Workplace and Employee Survey, 2005.

training. Married/common-law workers were more likely to receive employer-supported training than workers with another marital status. Controlling for other factors, workplace tenure and age were negatively related to receiving employer-supported training, although the effect was very small in both cases. In terms of order of magnitude, the two seemingly most influential variables were workplace size and industry. Those in larger workplaces were significantly more likely than those in smaller workplaces to receive employer-supported training, while those in primary industries, finance and insurance, or education and health were much more likely than those in

manufacturing and related industries to receive training. Somewhat surprisingly, working in a profitable workplace was associated with less employer-supported training. This is counterintuitive since profitable organizations have more resources for training, and training investments have generally been shown to have a favourable impact on organizational outcomes (Turcotte and Rennison 2004).

Do vulnerable workers access employer-supported training?

The regressions were also run for the four subsamples. Among low-wage workers, the least educated ones (i.e. with less than a high school education) were significantly less likely to receive employer-supported training, and by a substantive margin (Table 3). None of the other key characteristics were statistically significant for this group. Among less-educated workers, women were less likely than men to receive employer-supported training, and low-wage workers were less likely than those with higher wages to receive training. And the non-unionized in the group were more likely than the unionized to receive training, albeit at only a weak level of significance. In the regression results for non-union workers, the lower-waged were less likely than their higher-paid counterparts to receive employer-supported training, while those with less than a high school education received less training than those with more education. Among low-wage, less-educated, non-union workers, women were 25% less likely than men to receive employer-supported training, although this difference was not statistically significant.

Several control variables were significantly associated with training in one or more of the models. More specifically, workplace tenure was negatively associated with employer-supported training in all four subsamples, meaning that low-tenure workers were less likely than those with higher tenure to receive training. Workplace size was again positively and significantly related to employer-supported training, meaning that those in larger workplaces were more likely to receive training. Workers in finance and insurance or education and health also had much better odds of receiving training than those in manufacturing and related industries. Other variables sometimes significantly associated with receiving employer-supported training were non-permanent employment status, occupation and worker age, although no particular pattern was seen across multiple subsamples. Workers with non-permanent employment status, a part-time schedule or a profitable workplace had relatively low

Table 3 Odds ratios associated with employer-supported training among worker subsamples of interest

	Low-wage	Less-educated	Non-union	Low-wage, less-educated, non-union
Odds ratio				
Independent variables				
Women (ref. men)	0.77	0.72*	0.88	0.75
Low-wage (ref. higher-wage)	...	0.64*	0.58*	...
Education (ref. some postsecondary)				
Less than high school	0.58*	...	0.63*	...
Completed high school	1.04	...	0.89	...
University degree	1.08	...	1.14	...
Non-union (ref. unionized)	1.07	1.34*
Control variables				
Non-permanent (ref. permanent)	0.73	0.91	0.72*	0.88
Part-time	0.85	0.78	0.92	0.67
Occupation (ref. professional)				
Manager	1.56	1.52	0.93	4.48
White collar	0.72	0.95	0.60*	1.10
Blue collar	0.92	1.22	0.81*	1.32
Other marital status (ref. married)	0.76*	0.82	0.83*	0.91
Dependent children	0.98	1.10	1.00	1.35
Workplace tenure	0.91*	0.96*	0.96*	0.87*
Workplace tenure squared	1.00	1.00	1.00*	1.00
Worker age	0.94*	0.95	0.93*	1.00
Worker age squared	1.00	1.00	1.00*	1.00
Workplace size	1.61*	1.61*	1.64*	1.91*
Industry (ref. manufacturing and related)				
Primary	2.08	0.89	1.69*	5.46*
Retail trade	1.31	0.87	1.12	1.58*
Finance and insurance	3.92*	4.21*	3.50*	11.06*
Education and health	2.56*	1.50*	1.62*	2.81*
Other services	1.40*	1.41	1.20	2.41*
Profitable workplace	0.82	0.75	0.87	0.68

* statistically significant for the reference group (ref.) at the 0.10 level or better
Source: Statistics Canada, Workplace and Employee Survey, 2005.

odds of receiving employer-supported training, although significantly so in only one case.

Sensitivity analyses: Another look at training for men and women

The regression models were generated separately for men and women to assess whether the roles of the other independent variables differed between the sexes (Table 4). In both subsamples, those with low wages and those with the least education were sub-

stantially and significantly less likely to receive employer-supported training. That said, the odds ratios show that having less than a high school education was associated with much lower receipt of training among women than among men. Other education levels and non-union status had insignificant effects with similar odds for both sexes.

Turning to control variables, those with different associations for women and men were employ-

ment status, occupation and industry. Although non-permanent workers were generally less likely to receive employer-supported training, the effect was insignificant for men, but women in non-permanent jobs were only about one-half as likely as those with a permanent job to receive training. Among men, occupation was not significantly related to employer-supported training. Conversely, professional women were roughly twice as likely as women in other occupations to receive employer-supported training. Finally, regardless of sex, workers in finance and insurance were about three times as likely as those in manufacturing and related industries to receive employer-supported training. While no other significant differences were seen by industry among men, women in education and health were also much more likely to receive training. The results suggest that while similarities exist between men and women regarding the factors associated with employer-supported training, a much more sizeable variation is seen among women for two structural factors—employment status and occupation. In other words, having a non-permanent job or a non-professional occupation was associated with sharply lower odds of receiving training among women, but not among men.

Conclusion

Consistent with human capital theory and existing research, better-educated, higher-wage workers would be expected to have better access to training by their employer (Becker 1964, Underhill 2006 and Hurst 2008). Based on existing studies (e.g. Boheim and Booth 2004, and Turcotte et al. 2003), non-union workers were also ex-

Table 4 Odds ratios associated with employer-supported training among all workers by sex

	Women	Men
	Odds ratio	
Independent variables		
Low-wage (ref. higher-wage)	0.64*	0.65*
Education (ref. some postsecondary)		
Less than high school	0.42*	0.73*
Completed high school	0.79	0.90
University degree	1.08	1.22
Non-union (ref. unionized)	1.15	1.17
Control variables		
Non-permanent (ref. permanent)	0.57*	0.79
Part-time	0.99	0.71*
Occupation (ref. professional)		
Manager	0.59*	1.42
White collar	0.38*	0.91
Blue collar	0.56*	1.06
Other marital status (ref. married)	0.90	0.71*
Dependent children	1.04	0.95
Workplace tenure	0.97	0.97
Workplace tenure squared	1.00	1.00
Worker age	0.92*	0.94*
Worker age squared	1.00*	1.00
Workplace size	1.53*	1.56*
Industry (ref. manufacturing and related)		
Primary	1.65	1.34*
Retail trade	0.99	1.06
Finance and insurance	3.42*	2.92*
Education and health	1.82*	1.07
Other services	1.21	1.11
Profitable workplace	0.92	0.80*

* statistically significant for the reference group (ref.) at the 0.10 level or better

Source: Statistics Canada, Workplace and Employee Survey, 2005.

pected to have relatively low access to employer-supported training. Finally, after controlling for other individual, job and workplace characteristics, it was expected that training access for women would be poorer than for men even though recent studies had yielded mixed results. This expectation was based on literature suggesting that women are over-represented among workers considered vulnerable (e.g. Saunders 2003) and in poorer-quality employment (e.g. Cranford et al. 2003, and Padavic and Reskin 2002). This study used existing literature (Saunders 2003, Chaykowski 2005 and Vallée 2005) to select some of the key characteristics of 'vulnerable' workers: female, low wages, less education and non-union.

Workers in the four 'vulnerable' groups were less likely to receive, and also less likely to decline, employer-supported training. Also, within each group, women were less likely than men to receive, and also less likely to decline, employer-supported training, particularly among those theoretically most 'vulnerable'—low-paid, less-educated and non-union workers. These persistent differences between women and men across multiple groups and multiple years indicate a 'gender training barrier.'

Overall, the regression results consistently showed that, controlling for other factors, low-wage and less-educated workers were less likely to receive employer-supported training. Unexpectedly though, non-union workers generally had better odds than their unionized counterparts of receiving training. This was also contrary to the findings of other training studies. Although more analysis is required, one possible explanation is that unionization generally results in better wages, permanent employment status and a full-time schedule. Controlling for those factors disconnects the benefits of unionization. The odds ratios consistently indicated that women were less likely to receive employer-supported training, although the effect was statistically significant in only two of the six models. That said, in the subsamples of workers using the vulnerability characteristics, women were roughly one-quarter less likely than comparable men to receive training.

The separate regression models for women and men yielded two potentially important findings. First, having low education seems to be more problematic for women since the odds ratios showed that less than a high school education was associated with much lower odds of receiving training for women than for men. Second, non-permanent employment or a non-professional occupation was associated with sharply lower odds of receiving employer-supported training among women, but not among men. These results provide a further indication that women are potentially disadvantaged with respect to training, although it would be prudent to see whether these results are replicated in other studies. Like other research (Turcotte et al. 2003 and Peters 2004), this study found that, in the aggregate, men and women receive similar shares of training. The reason for women's lower share of training here but not elsewhere is that the difference is revealed only in the groups with 'vulnerable' characteristics.

The partial lack of statistical significance by sex in the regression results does not mean that the training barrier found in the descriptive statistics is illusory. On the contrary, the robustness of those differences indicates that the barrier is real. Thus, the somewhat differing results when controlling for other factors help clarify the results. More specifically, the results as a set suggest that the receipt of training varies not only on the basis of sex, but also on some or all of wage, education, unionization, employment status, occupation, workplace tenure, worker age, and industry. This is generally consistent with other studies (e.g. Turcotte et al. 2003, Hurst 2008 and Peters 2004).

Since it is well-established that women are over-represented in poor-quality jobs and some of the characteristics of poor jobs are associated with less training, it is as much a philosophical as a computational issue to quantify the effects of sex on the receipt of training. In any case, based on the overall results, workers having so-called vulnerable characteristics are indeed less likely to receive employer-supported training in Canada. That said, it remains unclear whether the training barrier is due to being female specifically, or whether those women are over-represented among workers having difficulty receiving training from their employer. While the answer remains elusive, the evidence is compelling that vulnerable workers are less likely to receive training and that women are relatively more disadvantaged among those workers. (For a more philosophical discussion of this dilemma, see Cooke and Zeytinoglu 2006).

To shed more light on this issue, the roles of employment status, worker age and workplace tenure on receiving training also deserve further investigation. In addition, the reasons various groups of workers accept or decline training warrant additional investigation. It is also reasonable to expect that some workers want training more than others, and that workers in certain industries or occupations will need more training than others. Thus, more research into the management decision-making process would be beneficial to clarify how and why employers allocate training resources among workers.

Perspectives

■ Notes

1. Since declining training is defined to capture the instance where workers opt out of training offered by their employers, the 'unmet need' for training is explored according to Peters (2004).
2. For additional details, see *Data source and definitions*. Recent studies exploring the relationships between training and various worker and workplace variables in Canada are available in Turcotte et al. 2003, Hurst 2008 and Peters 2004. For an international view of the value of skills attainment for workers, see OECD 2005.
3. Although the WES dataset contains provincial identifiers, this information is not contained in the version of the dataset that is available to researchers via the Statistics Canada Research Data Centres.

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